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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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McGUINNESS & MANARAS LLP
125 NAGOG PARK
ACTON, MA 01720

EXAMINER

BATES, KEVIN T

ART UNIT	PAPER NUMBER
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2155

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/054,186

Applicant(s)

MATTSON, GEOFFREY

Examiner

Kevin Bates

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

This Office Action is in response to a communication made on June 14, 2006.

Claims 1, 14, and 17 have been amended.

Claims 1 – 26 are currently pending in the application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 1 and 14, the claims read the limitation of "the same transformation" it is unclear in the claim, what is considered the same transformation to a label stack. A label stack is just a stack of next hops that the packet will have to go through to get to the desired destination. So any transformation to the protocol stack will be directly affecting the path a packet with traverse to get to the destination, so "the same transformation" can indicate forming the same label stack or label path. Or the "same transformation" can indicate that the node is picking a path for the packet just like before, but the path is different as seen in Page 7, paragraph 5 of the applications specification. Or the "same transformation" can be different or inverse transformation to that is "done exactly the same manner" as seen on

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page 9, paragraph 3 of the specification. The claim as written is not clear enough to know what it meant by the same transformation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (6904018) in view of Chuah (9408011).

Regarding claims 1 and 14, Lee teaches a method of providing backup resources for a primary label switched path (LSP) in a label switching network (Column 2, lines 64 – 67), the primary LSP having at least a portion for transmitting data packets containing a label from a first label switching node to a second label switching node (Column 1, lines 21 – 25), said portion including at least one intermediate label switching node between the first and second nodes (Figure 3, elements LSR2-15), the method comprising the steps of:

defining at least one backup LSP starting from the first node and merged with the primary LSP at the second node (Column 3, lines 43 – 46);

determining a transformation of the label of a packet transmitted along said portion of the primary LSP from an output of the first node to an input of the second node (Column 1, lines 27 – 31);

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configuring the first node to switch a packet to the backup LSP upon detection of a failure in said portion of the primary LSP (Column 4, lines 50 – 61); and

configuring at least one node of the backup LSP to process the label of any packet transmitted along the backup LSP (Figure 4, “looked back traffic flow after failure) so as to apply the same transformation as said transformation of the label of a packet transmitted along said portion of the primary LSP from an output of the first node to an input of the second node (Column 1, lines 27 – 31).

Lee does not explicitly indicate that the packet has a label stack on which to push and pull labels from, just swaping the values of labels (Column 1, lines 27 – 31).

Chuah teaches a label routing system that includes having a label stack located in each packet being communicated in the system (Column 6, line 61 – Column 7, line 14).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Chuah’s teaching of a label stack in Lee’s system in order to allow the swapping of labels happen based on the pulling and pushing of labels onto the stack already located in the label stack (Column 7, lines 15 – 19) not having to search a label table (Column 1, lines 27 – 31).

Regarding claims 2 and 15, Lee teaches a method as claimed in claims 1 and 14 respectively, wherein the node of the backup LSP configured to apply the transformation is the first node, said transformation being applied prior to pushing a label of the backup LSP (Column 2, lines 13 – 18).

Regarding claims 3 and 16, Lee teaches a method as claimed in claims 1 and 14 respectively, wherein the node of the backup LSP configured to apply the transformation is the second node (Figure 3, LSR8, wherein LSR8 is show to allow the transformation of the label stack to send the packets along a backup LSP).

Regarding claims 4 and 17, Lee teaches a method as claimed in claims 1 and 14 respectively wherein the step of determining the transformation of the label stack comprises transmitting messages of a signaling protocol between the nodes of said portion of the primary LSP (Column 4, lines 42 – 56), including indications of label stack manipulations performed by said nodes on packets transmitted along the primary LSP, said indications being processed at one of the first and second nodes for deriving said transformation (Column 4, lines 47 – 49).

Regarding claims 5 and 18, Lee teaches a method as claimed in claims 1 and 14 respectively, wherein the step of determining the transformation of the label stack comprises transmitting at least one sample packet from the first node to the second node along said portion of the primary LSP (Column 4, lines 42 – 56).

Regarding claims 6 and 19, Lee teaches a method as claimed in claims 1 and 14 respectively, wherein the first node is configured to switch a packet intended for the primary LSP to the backup LSP upon detection of a failure in said portion of the primary LSP up to the intermediate node situated next to the first node (Column 4, lines 50 – 61).

Regarding claims 7 and 20, Lee teaches a method as claimed in claims 1 and 14 respectively, further comprising the steps of: defining at least one switchback LSP from an intermediate node of the primary LSP to the first node (Column 4, lines 16 – 22); and configuring said intermediate node to switch a packet to the switchback LSP upon detection of a failure in said portion of the primary LSP downstream of said intermediate node and up to the node situated next to said intermediate node (Column 4, lines 16 – 22).

Regarding claim 8 and 21, Lee teaches a method as claimed in claims 7 and 20, respectively, further comprising the step of configuring the first node to switch to the backup LSP any packet received on the switchback LSP (Figure 3, the looped back traffic flow starting at node LSR 6 and travels to first node LSR 9 and 1, and travels along the backup LSP).

Regarding claims 9 and 22, Lee teaches a method as claimed in claims 8 and 20, further comprising the steps of: determining a second transformation of the label stack as the inverse of a transformation of the label stack of a packet transmitted along said portion of the primary LSP from the output of the first node to said intermediate node; and configuring at least one node of the switchback LSP to process the label stack of any packet transmitted from said intermediate node along the switchback LSP so as to apply said second transformation (Figure 3, for the immediate nodes changing the labels to push the traffic flow back to the ingress nodes and down the back up LSP).

Regarding claims 10 and 23, Lee teaches a method as claimed in claims 9 and 22, wherein the node of the switchback LSP configured to apply the

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second transformation is said intermediate node, the second transformation being applied prior to pushing a label of the switchback LSP (Figure 3, for the immediate nodes changing the labels to push the traffic flow back to the ingress nodes and down the back up LSP).

Regarding claims 11 and 24, Lee teaches a method as claimed in claims 10 and 23, wherein the primary LSP has at least one additional intermediate node between the first node and said intermediate node, wherein the switchback LSP is defined to comprise the nodes of the primary LSP, in a reverse direction, from said intermediate node to the first node (Figure 3, for the immediate nodes changing the labels to push the traffic flow back to the ingress nodes and down the back up LSP).

Regarding claims 12 and 25, Lee teaches a method as claimed in claims 11 and 24, further comprising the step of configuring said additional intermediate node to switch a packet to the switchback LSP upon detection of a failure in said portion of the primary LSP downstream of said additional intermediate node and up to the node situated next to said additional intermediate node (Column 4, lines 42 – 56).

Regarding claims 13 and 26, Lee discloses a method as claimed in claims 12 and 25, further comprising the steps of: determining a third transformation of the label stack as the inverse of a transformation of the label stack of a packet transmitted along said portion of the primary LSP from the output of the first node to said additional intermediate node; and configuring said additional intermediate node to process the label stack of any packet that it

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switches to the switchback LSP so as to apply said inverse transformation prior to pushing a label of the switchback LSP (Figure 3, for the immediate nodes each having to change the labels to push the traffic flow back to the ingress nodes and down the back up LSP).

Response to Arguments

Applicant's arguments filed June 14, 2006 have been fully considered but they are not persuasive.

The applicant argues that the combination of the references Lee and Chuah, does not teach performing the same transformation of the label stack along the back-up path as the primary path, and also that the combination of Lee and Chuah was made in hindsight.

The examiner disagrees, regarding the transformation to the label stack along the primary path and the back up path, the first nodes and all nodes perform the same transformation to the label switch of a packet whether that packet is traveling along the primary or back up path of the network. A transformation to a label stack can be considered any change in the stack, as seen in Column 1, lines 27 – 31 of Lee, it shows that each node has to perform a transformation on the label or label stack, where basically the stack has to be altered so that the top label is equal to the top label indicates the network node in the label switched network. In Chuah, Column 6, line 61 – Column 7, line 14, the label stack is added to the packet by the border, ingress or “first node” of the label switching network adds or transforms the entire label stack to the node, so that the stack indicates the exact path that the packet should take throughout the

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network. In the reference, Lee, Lee teaches a method of error recovery that, when an error occurs, back tracks the packet to the ingress node, which forwards the packet along the alternative, back-up path (Figure 1) and the way it forwards it along the new path is by performing the same operation on the labeling of the packet, meaning it takes swaps the old label for the label of the node along the new path, it performs the same type of transformation of the label, just a different label, which indicates the new path. So as seen, the same transformation is performed on the packet along either the primary or back up path in the network.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The reasoning of adding the teaching of label stacks of Chuah to the label swapping system in Lee is proper because there is a benefit to using label stacks instead of straight label swapping because it simplifies the other nodes in the network and their need for label tables. This reasoning was present at the time of the invention and was not made based on the reasoning of the invention.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Bates whose telephone number is (571) 272-3980. The examiner can normally be reached on 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571) 272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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KB
September 1, 2006


SALEH NAJJAR
SUPERVISORY PATENT EXAMINER